The Evening Sky Map

FREE* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY

WWW.SKYMAPS.COM

SOUTHERN HEMISPHERE
JULY 2014

Sky Calendar – July 2014

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1 **Venus 4.1° N of Aldebaran** (30° from Sun, morning sky) at 19h UT. Mags. −3.9 and +0.9.
1 **Moon near Regulus** (evening sky) at 22h UT.
4 **Earth at Aphelion** (farthest from Sun) at 0h UT. The Sun-Earth distance is 1.016682 a.u. or about 152.1 million km.
5 **First Quarter Moon** at 12:00 UT.
6 **Moon very near Mars** (evening sky) at 1h UT. Mag. +0.1. Occultation visible from northern South America and southern Central America.
6 **Moon near Spica** (evening sky) at 6h UT.
6 **Moon, Mars and Spica** within circle diameter 3.8° (evening sky) at 8h UT. Mags. +0.1 and +1.0.
8 **Moon very near Saturn** (evening sky) at 2h UT. Mag. +0.4. Occultation visible from southern South America.
9 **Moon near Antares** (evening sky) at 18h UT.
12 **Full Moon** at 11:26 UT.
12 **Mercury at greatest elongation**, 21° west of Sun (morning sky) at 18h UT. Mag +0.5.
13 **Moon at perigee** (closest to Earth) at 8h UT (358,260 km; angular size 33.4').
14 **Mars 1.3° NNE of Spica** (92° from Sun, evening sky) at 4h UT. Mags. +0.2 and +1.0.
16 **Mercury 6.2° ESE of Venus** (20° and 26° from Sun, morning sky) at 19h UT. Mags. −0.1 and −3.9.
19 **Last Quarter Moon** at 2:09 UT.
21 **Moon near the Pleiades** (morning sky) at 16h UT.
22 **Moon near Aldebaran** (morning sky) at 12h UT.
24 **Moon near Venus** (24° from Sun, morning sky) at 17h UT. Mag. −3.9.
24 **Jupiter at conjunction** with the Sun at 21h UT. Passes into the morning sky (not visible).
26 **New Moon** at 22:42 UT. Start of lunation 1133.
28 **Moon at apogee** (farthest from Earth) at 3h UT (distance 406,567 km; angular size 29.4').
29 **Moon near Regulus** (evening sky) at 4h UT.

More sky events and links at http://Skymaps.com/skycalendar/

All times in Universal Time (UT). (Australian Eastern Standard Time = UT + 10 hours.)

Skymaps.com

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- Star Atlases & Planispheres
- Books for Sky Watchers
- Star Charts & Astro Posters
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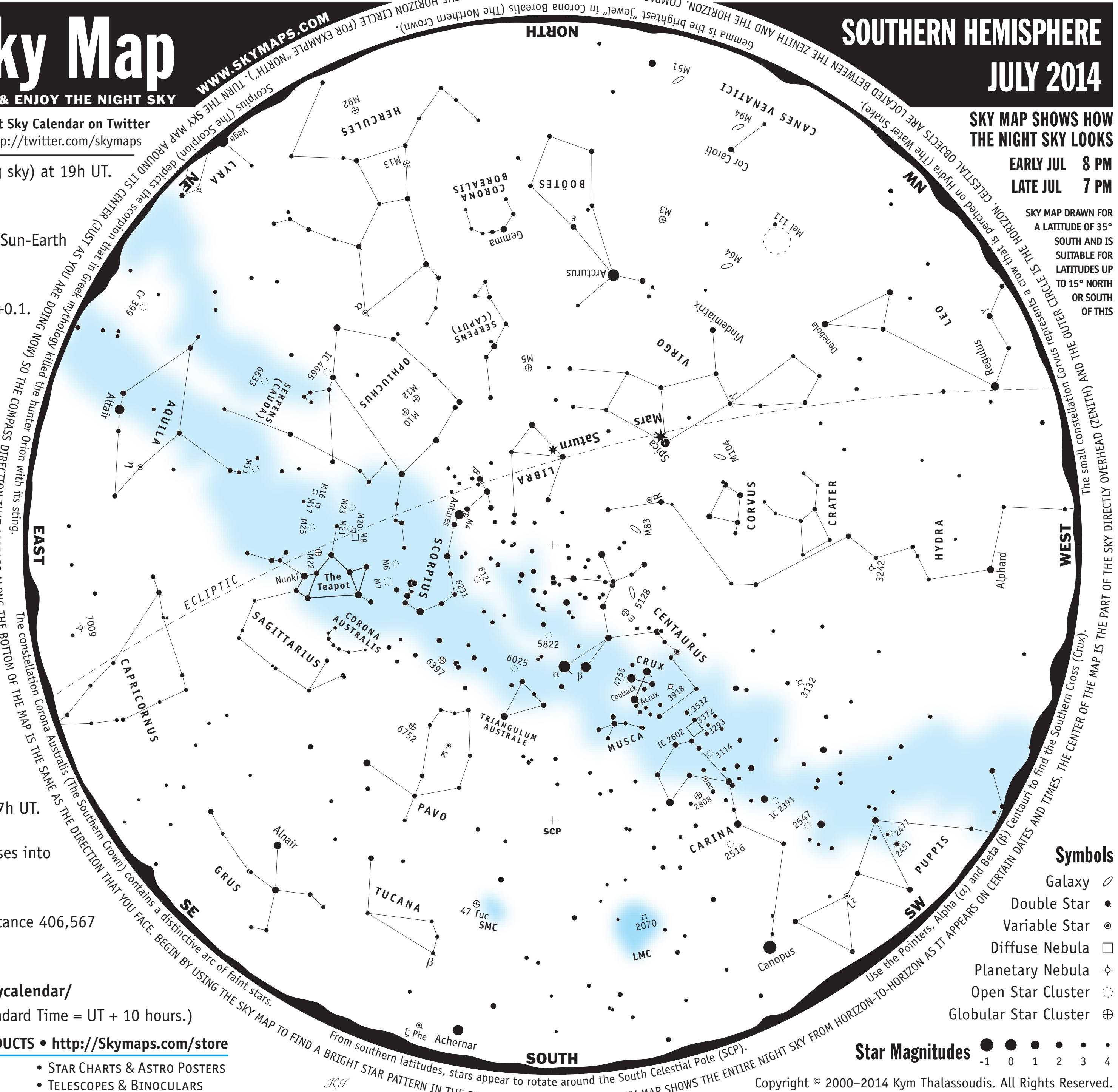
All sales support the production and free distribution of The Evening Sky Map.

SKY MAP SHOWS HOW THE NIGHT SKY LOOKS

EARLY JUL 8 PM
LATE JUL 7 PM

SKY MAP DRAWN FOR A LATITUDE OF 35° SOUTH AND IS SUITABLE FOR LATITUDES UP TO 15° NORTH OR SOUTH OF THIS



INSTRUCTIONS: THE SKY MAP SHOWS THE ENTIRE NIGHT SKY FROM HORIZON-TO-HORIZON AS IT APPEARS ON CERTAIN DATES AND TIMES. THE CENTER OF THE MAP IS THE PART OF THE SKY DIRECTLY OVERHEAD (ZENITH) AND THE OUTER CIRCLE IS THE HORIZON. CELESTIAL OBJECTS ARE LOCATED BETWEEN THE ZENITH AND THE HORIZON. COMPASS DIRECTIONS ARE INDICATED ALONG THE HORIZON CIRCLE (FOR EXAMPLE „NORTH"). TURN THE SKY MAP AROUND ITS CENTER (JUST AS YOU ARE DOING NOW) SO THE COMPASS DIRECTION THAT APPEARS ALONG THE BOTTOM OF THE MAP IS THE SAME AS THE DIRECTION THAT YOU FACE. BEGIN BY USING THE SKY MAP TO FIND A BRIGHT STAR PATTERN IN THE SKY.

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About the Celestial Objects

Listed on this page are several of the brighter, more interesting celestial objects visible in the evening sky this month (refer to the monthly sky map). The objects are grouped into three categories. Those that can be easily seen with the naked eye (that is, without optical aid), those easily seen with binoculars, and those requiring a telescope to be appreciated. **Note, all of the objects (except single stars) will appear more impressive when viewed through a telescope or very large binoculars.** They are grouped in this way to highlight objects that can be seen using the optical equipment that may be available to the star gazer.

Tips for Observing the Night Sky

When observing the night sky, and in particular deep-sky objects such as star clusters, nebulae, and galaxies, it's always best to observe from a dark location. Avoid direct light from street lights and other sources. If possible observe from a dark location away from the light pollution that surrounds many of today's large cities.

You will see more stars after your eyes adapt to the darkness—usually about 10 to 20 minutes after you go outside. Also, if you need to use a torch to view the sky map, cover the light bulb with red cellophane. This will preserve your dark vision.

Finally, even though the Moon is one of the most stunning objects to view through a telescope, its light is so bright that it brightens the sky and makes many of the fainter objects very difficult to see. So try to observe the evening sky on moonless nights around either New Moon or Last Quarter.

Astronomical Glossary

Conjunction – An alignment of two celestial bodies such that they present the least angular separation as viewed from Earth.

Constellation – A defined area of the sky containing a star pattern.

Diffuse Nebula – A cloud of gas illuminated by nearby stars.

Double Star – Two stars that appear close to each other in the sky; either linked by gravity so that they orbit each other (binary star) or lying at different distances from Earth (optical double). Apparent separation of stars is given in seconds of arc (").

Ecliptic – The path of the Sun's center on the celestial sphere as seen from Earth.

Elongation – The angular separation of two celestial bodies. For Mercury and Venus the greatest elongation occurs when they are at their most angular distance from the Sun as viewed from Earth.

Galaxy – A mass of up to several billion stars held together by gravity.

Globular Star Cluster – A ball-shaped group of several thousand old stars.

Light Year (ly) – The distance a beam of light travels at 300,000 km/sec in one year.

Magnitude – The brightness of a celestial object as it appears in the sky.

Open Star Cluster – A group of tens or hundreds of relatively young stars.

Opposition – When a celestial body is opposite the Sun in the sky.

Planetary Nebula – The remnants of a shell of gas blown off by a star.

Universal Time (UT) – A time system used by astronomers. Also known as Greenwich Mean Time. Australian Eastern Standard Time (Sydney, Australia) is UT plus 10 hours.

Variable Star – A star that changes brightness over a period of time.

CELESTIAL OBJECTS

SOUTHERN HEMISPHERE

JULY 2014

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Easily Seen with the Naked Eye

Altair	Aql	●	Brightest star in Aquila. Name means "the flying eagle". Dist=16.7 ly.
Arcturus	Boo	●	Orange, giant K star. Name means "bear watcher". Dist=36.7 ly.
β Centauri	Cen	●	With Alpha Centauri, forms the so-called "Pointers-to-the-Cross". Dist=525 ly.
α Centauri	Cen	◉	Nearest bright star to Sun at 4.4 ly. Brilliant double star in a telescope. 80 year period.
Coalsack	Cru	◆	Most famous naked-eye dark nebula. Requires dark sky. Dist=600 ly.
α Herculis	Her	◉	Semi-regular variable. Magnitude varies between 3.1 & 3.9 over 90 days. Mag 5.4 companion.
Antares	Sco	●	Red, supergiant star. Name means "rival of Mars". Dist=135.9 ly.
Spica	Vir	●	Latin name means "ear of wheat" and shown held in Virgo's left hand. Dist=250 ly.

Easily Seen with Binoculars

η Aquilae	Aql	◉	Bright Cepheid variable. Mag varies between 3.6 & 4.5 over 7.166 days. Dist=1,200 ly.
6397	Ara	⊕	Thought to be the nearest globular. Dist=7,000 ly.
2808	Car	⊕	Located 4 deg W of Nu Carinae. Visible to the naked eye on clear nights.
R Carinae	Car	◉	Long period variable. Magnitude varies between 3.9 & 10.5 over 309 days.
3114	Car	⁘	Stunning open cluster. 30+ stars visible through 7x binoculars. Dist=2,900 ly.
3293	Car	⁘	Rich, tightly packed. Surrounded by large, faint nebulosity. Dist=8,500 ly.
IC 2602	Car	⁘	The "Five of Diamonds". Bright cluster twice diameter of full Moon. Dist=491 ly.
3372	Car	□	Eta Carinae Nebula. Enormous glowing cloud in rich star field. Dist=8,000 ly.
3532	Car	⁘	Herschel - "most brilliant cluster". 60+ stars in 7x binoculars. Dist=1,300 ly.
ω Centauri	Cen	⊕	Largest and brightest globular star cluster in sky. 1 million stars. Dist=17,000 ly.
4755	Cru	⁘	Jewel Box. Outstanding star cluster. Many contrasting colours. Dist=7,600 ly.
LMC	Dor	⬭	Large Magellanic Cloud. A neighbouring galaxy of the Milky Way. Dist=180,000 ly.
M13	Her	⊕	Best globular in northern skies. Discovered by Halley in 1714. Dist=23,000 ly.
R Hydrae	Hya	◉	Long period variable. Mag varies between 3.0 & 11.0 over 390 days. Brilliant red.
M12	Oph	⊕	Close to the brighter M10. Dist=18,000 ly.
M10	Oph	⊕	3 degrees from the fainter M12. Both may be glimpsed in binoculars. Dist=14,000 ly.
IC 4665	Oph	⁘	Large, scattered open cluster. Visible with binoculars.
κ Pavonis	Pav	◉	Cepheid-type. Magnitude varies between 3.9 & 4.8 over 9.088 days.
6752	Pav	⊕	One of the better globular star clusters in the sky. Dist=14,000 ly.
M8	Sgr	□	Lagoon Nebula. Bright nebula bisected by a dark lane. Dist=5,200 ly.
M25	Sgr	⁘	Bright cluster located about 6 deg N of "teapot's" lid. Dist=1,900 ly.
M22	Sgr	⊕	A spectacular globular star cluster. Telescope will show stars. Dist=10,000 ly.
M4	Sco	⊕	A close globular. May just be visible without optical aid. Dist=7,000 ly.
M6	Sco	⁘	Butterfly Cluster. 30+ stars in 7x binoculars. Dist=1,960 ly.
M7	Sco	⁘	Superb open cluster. Visible to the naked eye. Age=260 million years. Dist=780 ly.
M5	Ser	⊕	Fine globular star cluster. Telescope will reveal individual stars. Dist=25,000 ly.
6025	TrA	⁘	A small open star cluster in Milky Way. Dist=2,700 ly.
47 Tucanae	Tuc	⊕	Spectacular object. Telescope will reveal stars. Near edge of SMC. Dist=15,000 ly.
SMC	Tuc	⬭	Small Magellanic Cloud. Companion galaxy to Milky Way. Requires dark sky. Dist=210,000 ly.

Telescopic Objects

ε Boötis	Boo	◉	Red giant star (mag 2.5) with a blue-green mag 4.9 companion. Sep=2.8". Difficult to split.
3918	Cen	✧	The Blue Planetary. Visible in a small telescope as a round blue disk.
5128	Cen	⬭	Bisected by a wide obscuring lane. Strong radio source. Dist=14 million ly.
3242	Hya	✧	Ghost of Jupiter. Bright blue disk. Mag 11 central star. Dist=2,600 ly.
M83	Hya	⬭	Classic face-on spiral. Discovered in 1752 by Lacaille. In attractive star field.
5822	Lup	⁘	Large, attractive cluster. Dist=1,800 ly. Open cluster NGC 5823 to the south.
M23	Sgr	⁘	Elongated star cluster. Telescope required to show stars. Dist=2,100 ly.
M20	Sgr	□	Trifid Nebula. A telescope shows 3 dust lanes trisecting nebula. Dist=5,200 ly.
M21	Sgr	⁘	A fine and impressive cluster. Dist=4,200 ly.
M17	Sgr	□	Omega Nebula. Contains the star cluster NGC 6618. Dist=4,900 ly.
6124	Sco	⁘	Contains 5 bright tightly packed stars near centre. 7 star chain. Dist=1,600 ly.
M11	Sct	⁘	Wild Duck Cluster. Resembles a globular through binoculars. V-shaped. Dist=5,600 ly.
M16	Ser	□	Eagle Nebula. Requires a telescope of large aperture. Dist=8,150 ly.
3132	Vel	✧	One of the brightest planetaries. Magnitude 10 central star. Dist=2,600 ly.
M104	Vir	⬭	Sombrero Galaxy. Almost edge-on spiral galaxy. Protruding central core.
γ Virginis	Vir	◉	Superb pair of mag 3.5 yellow-white stars. Orbit=169 years. At their closest in 2005.

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